

FACT SHEET

as required by LAC 33:IX.2411, for draft **Louisiana Pollutant Discharge Elimination System Permit Number LA0066630; Agency Interest Number AI 19537; Activity Number PER20050001** to discharge to waters of the **State of Louisiana** as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

- I. **THE APPLICANT IS:** **Jefferson Parish Department of Sewerage East Bank Wastewater Treatment Plant**
1221 Elmwood Park Boulevard, Suite 803
Harahan, Louisiana 70123
- II. **PREPARED BY:** Todd Franklin
Environmental Scientist 3
- DATE PREPARED:** April 19, 2006
- III. **PERMIT ACTION:** Reissue LPDES permit LA0066630, AI 19537, PER20050001
- LPDES permit application received: February 28, 2005
Administrative Completeness: March 14, 2005
- LPDES permit effective: September 1, 2000
LPDES permit expires: August 31, 2005

IV. **FACILITY INFORMATION:**

- A. The application is for the discharge of treated sanitary wastewater from a publicly owned treatment works serving Metairie, Jefferson, River Ridge, and other unincorporated areas.
- B. The permit application indicates the receipt of the following industrial wastewater:

Industrial Facility	Type of Process	Total Daily Flow
CP Louisiana, Inc.	Manufacturer of 55 gallon steel drums	73,000 GPD
Cintas Corporation	Industrial Laundry Rental	50,000 GPD
Diversified Foods & Seasonings, Inc.	Manufacturing food products	14,000 GPD
Dixie Produce & Packaging, Inc.	Produce packaging	125,000 GPD
LA Coca Cola Bottling Co. Ltd.	Manufacturing, storage, sale, and distribution of products	193,000 GPD
Snee Chemical Co.	Manufacture, package & distribution of janitorial supplies	1,100 GPD

- C. The facility is located on #2 Humane Way in Harahan, Jefferson Parish.

Front Gate Location: Latitude: 29°58'15" North
Longitude: 90°11'15" West

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- D. The treatment facility consists of bar screening, aerated grit chambers, and primary sedimentation, followed by biological treatment using conventional activated sludge followed by secondary clarification. Sodium hypochlorite controlled by ORP is used for disinfection. Sludge is thickened by dissolved air flotation and stored in sludge holding tanks prior to dewatering with belt filter presses. Dewatered sludge is transported to a co-disposal landfill.

E. Outfall 001

Discharge Location: Latitude: 29°57'48" North
Longitude: 90°13'59" West

Description: treated sanitary wastewater

Design Capacity: 33 MGD

Type of Flow Measurement, which the facility is currently using:

Combination totalizing meter/continuous recorder

V. RECEIVING WATERS:

The discharge is into the Mississippi River (River Mile 112) in subsegment 070301 of the Mississippi River Basin. This segment is not listed on the 2004303(d) List of Impaired Waterbodies.

The **critical low flow** (7Q10) of the Mississippi River is 141,955 cfs.

The **hardness value** is 150.5 mg/l and the **fifteenth percentile value for TSS** is 23 mg/l.

The designated uses and degree of support for subsegment 070301 of the Mississippi River Basin are as indicated in the table below^{1/}:

Overall Degree of Support for Segment	Degree of Support of Each Use						
	Primary Contact Recreation	Secondary Contact Recreation	Propagation Fish & Wild	Outstanding Natural Resource W	Drinking Water Sup	Shell fish Propagation	Agricultur
FULLY SUPPORTED	FULL	FULL	FULL	N/A	FULL	N/A	N/A

^{1/}The designated uses and degree of support for Segment 070301 of the Mississippi River Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 1998 Water Quality Management Plan, Volume 5, Part B, Water Quality Inventory, respectively.

VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 070301 of the Mississippi River Basin, is listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS) as habitat for the *Pallid sturgeon*, which is listed as an endangered species. LDEQ as instructed by the FWS in a letter dated October 21, 2005, from Watson (FWS) to Gautreaux (LDEQ), this fact sheet has been sent to the FWS for review and consultation.

VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effects to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

VIII. PUBLIC NOTICE:

Upon publication of the public notice in the Department of Environmental Quality Public Notice Mailing List and the most circulated newspaper in the area of the facility, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit to the LDEQ contact person, listed below, and may request a public hearing to clarify issues involved in the permit decision. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

For additional information, contact:

Mr. Todd Franklin
Environmental Scientist 3
Permits Division
Department of Environmental Quality
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

IX. PROPOSED PERMIT CONDITIONS:

Subsegment 070301, Mississippi River-From Monte Sano Bayou to Head of Passes, is not listed on LDEQ's Final 2004 303(d) List as impaired, and to date no TMDL's have been established. A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by any future TMDLs.

FINAL EFFLUENT LIMITS:

The previous LPDES permit contained water quality based limits for Total Residual Chlorine (TRC). As per LAC 33:IX.2707.L.2.a.ii availability of information which was not available at the time of previous permit issuance and will justify the application of less stringent effluent limitations in the proposed permit constitutes an exception to LAC 33:IX.2707.L.1 which states when a permit is renewed or reissued, standards or conditions must be at least as stringent as the final limitations, standards, or conditions in the previous permit.

The previous LPDES permit required water quality based limits of 0.75 mg/l daily maximum for TRC. A geometric average was found for TRC using DMR data from the months of January 2003 through May 2005. The resultant geometric average was evaluated in a water quality screen, and did not indicate the continuing need for effluent limitations for TRC. Because of this, and due to the fact that the receiving waterbody is not listed on the 303(d) list as being impaired for TRC, TRC limitations have been removed from the permit.

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**OUTFALL 001 – discharge treated sanitary wastewater into the Mississippi River
design capacity of 33 MGD**

Final limits shall become **EFFECTIVE** on the effective date of the permit and **EXPIRE** on the expiration date of the permit.

Effluent Characteristic	Monthly Average (lbs./day)	Monthly Average	Weekly Average	Basis
Biochemical Oxygen Demand (BOD₅)	8,257 lbs./day	30 mg/l	45 mg/l	Biochemical Oxygen Demand (BOD ₅) effluent limitations are set in accordance with the Statewide Sanitary Effluent Limitations Policy (SSELP) for facilities of this treatment type and size, which discharge into the Mississippi River.
Total Suspended Solids (TSS)	8,257 lbs./day	30 mg/l	45 mg/l	Total Suspended Solids (TSS) effluent limitations are set in accordance with the Statewide Sanitary Effluent Limitations Policy (SSELP) for facilities of this treatment type and size, which discharge into the Mississippi River.

Other Effluent Limitations:**pH**

According to LAC 33:IX.3705.A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:IX.5905.C, the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

Fecal Coliform

The discharge from this facility is into a water body, which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5.b.i, the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through best Professional Judgment in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

TOXICITY CHARACTERISTICS

In accordance with EPA's Region 6 Post-Third Round Toxics Strategy, permits issued to treatment works treating domestic wastewater with a flow (design or expected) greater than or equal to 1 MGD shall require biomonitoring at some frequency for the life of the permit or where available data show reasonable potential to cause lethality, the permit shall require a whole effluent toxicity (WET) limit (Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, September 27, 2001 VERSION 4).

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Whole effluent biomonitoring is the most direct measure of potential toxicity, which incorporates the effects of synergism of the effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore required as a condition of this permit to assess potential toxicity. LAC 33:IX.1121.B.3, provides for the use of biomonitoring to monitor the effluent for protection of State waters. The biomonitoring procedures stipulated as a condition of this permit are as follows:

The permittee shall submit the results of any biomonitoring testing performed in accordance with the LPDES permit No. LA0066630, Biomonitoring Section for the organisms indicated below:

TOXICITY TESTS	FREQUENCY
Acute static renewal 48-hour acute test using <i>Daphnia pulex</i>	Once (1)/Quarter ¹
Acute static renewal 48-hour acute test using <i>Pimephales promelas</i>	Once (1)/Quarter ¹

Dilution Series – The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional concentrations shall be 0.45%, 0.61%, 0.81%, 1.08%, and 1.4%. The low-flow effluent concentrations (critical low-flow dilution) are defined as 1.08% effluent (the 10:1 Acute-to-Chronic ratio has been implemented because the critical dilution is less than 5%). The critical dilution is calculated in Appendix B-1 of this fact sheet. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in the Biomonitoring Section under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in the Biomonitoring Section of the permit.

The permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or waterbody. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.2903. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act (CWA).

¹ If there are no lethal effects demonstrated after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the monitoring frequency for the test species may be reduced to not less than once per year for the less sensitive species (usually *Pimephales promelas*) and not less than twice per year for the more sensitive species (usually *Daphnia pulex*). Upon expiration of the permit, the monitoring frequency for both species shall revert to once per quarter until the permit is reissued.

TOXIC SUBSTANCES

Due to drinking water supply being a designated use, the permittee shall analyze the final effluent for the presence of the following toxic substances. The MQL is intended as action levels. Should a toxic substance exceed the MQL, the permittee shall determine the source of the substance and take whatever measures necessary to secure abatement in order to protect all drinking water sources downstream of the discharge. The LDEQ Regional Office and all drinking water intakes within five (5) miles downstream of this discharge shall be notified upon detection of any toxic substance above the MQL. Records of any actions taken shall be made available upon request by any duly authorized regional inspectors and/or LDEQ Headquarter representatives.

A report containing the results of the lab analysis indicating if any toxic substances have exceeded the MQL including a brief summary of any abatement taken at the time, must be submitted to this Office within 20 days of completion of the analysis. **The first analysis shall be performed within six months following the effective date of the permit, and every six months thereafter, by a 24-hour composite sample type.**

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Reports must be submitted to the following address:

Department of Environmental Quality
Office of Environmental Compliance
Enforcement Division
Post Office Box 4312
Baton Rouge, Louisiana 70821-4312

TOXIC SUBSTANCES

TOXIC SUBSTANCES (CASIN#)	Required MQL (ug/l)	EPA Test Method
VOLATILE ORGANIC CHEMICALS		
acrolein (107-02-8)	50	624
acrylonitrile (107-13-1)	50	624
benzene (71-43-2)	10	624
bromodichloromethane (dichlorobromomethane) (75-27-4)	10	624
bromoform (tribromomethane) (75-25-2)	10	624
carbon tetrachloride (56-23-5)	10	624
chlorobenzene (108-90-7)	10	624
chloroform (trichloromethane)	10	624
chloromethane (methyl chloride) (74-87-3)	50	624
1,1-dichloroethane (75-34-3)	10	624
1,2-dichloroethane (107-06-2)	10	624
1,1-dichloroethylene (75-35-4)	10	624
dichloromethane (methylene chloride) (75-09-2)	20	624
cis-1,3-dichloropropene	10	624
trans-1,3-dichloropropene	10	624
ethylbenzene (100-41-4)	10	624
para-dichlorobenzene*	---	---
1,1,2,2-tetrachloroethane (79-34-5)	10	624
tetrachloroethylene (127-18-4)	10	624
toluene (108-88-3)	10	624
1,1,1-trichloroethane (71-55-6)	10	624
1,1,2-trichloroethane (79-00-5)	10	624
trichloroethylene (79-01-6)	10	624
vinyl chloride (chloroethylene) (75-01-4)	10	624
ACID EXTRACTABLE ORGANIC CHEMICALS		
2-chlorophenol (95-57-8)	10	625
3-chlorophenol	10	625
4-chlorophenol	10	625
2,4-dichlorophenol (120-83-2)	10	625
2,3-dichlorophenol	10	625
2,5-dichlorophenol	10	625
2,6-dichlorophenol	10	625
3,4-dichlorophenol	10	625

TOXIC SUBSTANCES (CAS No.)	Required MQL (µg/l)	EPA Test Method
2,4-dinitrophenol (51-28-5)	50	625
pentachlorophenol (87-86-5)	50	625
phenol (108-95-2)	10	625
2,4,6-trichlorophenol (88-06-2)	10	625
BASE/NEUTRAL/EXTRACTABLE/ORGANIC CHEMICALS		
anthracene (120-12-7)	10	625
benzidine (92-87-5)	50	625
bis(2-chloroethyl)ether (111-44-4)	10	625
bis(2-chloro-1-methylethyl)ether (39638-32-9)	10	625
bis(2-ethylhexyl)phthalate (117-81-7)	10	625
di-n-butyl phthalate (84-74-3)	10	625
1,3-dichlorobenzene (541-73-1)	10	625
1,2-dichlorobenzene (95-50-1)	10	625
1,4-dichlorobenzene (106-46-7)	10	625
3,3-dichlorobenzidine (91-94-1)	50	625
diethyl phthalate (84-66-2)	10	625
dimethyl phthalate (131-11-3)	10	625
2,4-dinitrotoluene (121-14-2)	10	625
1,2-diphenylhydrazine (122-66-7)	20	625
fluoranthene (206-44-0)	10	625
hexachlorobenzene (118-07-1)	10	625
hexachlorobutadiene (87-68-3)	10	625
hexachlorocyclopentadiene (77-47-4)	10	625
hexachloroethane (67-72-1)	20	625
isophorone (78-59-1)	10	625
nitrobenzene (98-95-3)	10	625
N-nitrosodimethylamine (62-75-9)	50	625
N-nitrosodiphenylamine (86-30-6)	20	625

TOXIC SUBSTANCES (CAS No.)	Required MQL (µg/l)	EPA Test Method
PESTICIDES & PCBs		
aldrin (309-00-2)	0.05	608
PCB's (Total)	1.0	608
gamma-BHC (Lindane, Hexachlorocyclohexane) (58-89-9)	0.05	608
chlordan (57-74-9)	0.2	608
4,4"DDD (TDE) (72-54-8)	0.1	608
4,4"DDE (72-55-9)	0.1	608
4,4"DDT (50-29-3)	0.1	608
dieldrin (60-57-1)	0.1	608
endosulfan I (alpha) (115-29-7)	0.1	608
endosulfan II (beta) (115-29-7)	0.1	608

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endrin (72-20-8)	0.1	608
heptachlor (76-44-8)	0.05	608
methoxychlor*		---
2,3,7,8-tetrachlorodibenzo-p-dioxin (1764-01-6)	**	625
toxaphene (8001-35-2)	5.0	608
2,4-dichlorophenoxyacetic acid (2,4-D) (94-75-7)	10	509B
2-(2,4,5-trichlorophenoxy)propionic acid	4	509B
METALS		
antimony (7440-36-0)	60	200.7
arsenic (7440-38-2)	10	206.2
barium*		---
beryllium (7440-41-7)	5	200.7
cadmium (7440-43-9)	1	213.2
chromium III (16065-83-1)	10	200.7
chromium VI (7440-47-3)	10	200.7
copper (7550-50-8)	10	220.2
lead (7439-92-1)	5	239.2
flouride*		---
mercury (7439-97-6)	0.2	245.1
nickel (7440-02-0)	40	200.7
nitrate (as N)*		---
selenium (7782-49-2)	5	270.2
silver (7440-22-4)	2	272.2
thallium (7440-28-0)	10	279.2
zinc (7440-66-6)	20	200.7
MISCELLANEOUS		
cyanide	20	335.2
total phenols	5	420.1

* In addition to the effluent lab result for this pollutant, also report MQL and Test Method used.

** Method 625 is a nonquantitative screen that is used to ascertain a positive or negative result. With proper QA/QC techniques, a positive result can be expected at a level above 1 ppm. If this test yields a positive response, then Method 613 would be appropriate to establish the quantitative value. Method 613 requires use of the dioxin standard which is dangerous and should not be used unnecessarily.

X. PREVIOUS PERMIT:

LPDES Permit Number: LA0066630 Effective: September 1, 2000; Expired: August 31, 2005

Outfall 001, discharge treated sanitary wastewater into the Mississippi River
 33 MGD Design Capacity

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Monthly Average	Weekly Average	Measurement Frequency	Sample Type
Flow	REPORT	REPORT	Continuous	Recorder
Biochemical Oxygen Demand (BOD ₅)	30 mg/l	45 mg/l	1/day	12 Hr. Composite
Total Suspended Solids (TSS)	30 mg/l	45 mg/l	1/day	12 Hr. Composite
Fecal Coliform Colonies	200	400	1/day	Grab
pH (standard units)	6.0 s.u.	9.0 s.u.	1/day	Grab
Toxic substances	N/A	N/A	1/6 month	24 Hr. Composite
Biomonitoring	Monthly Average Minimum	48 Hour Minimum		
<i>Daphnia pulex</i>	REPORT	REPORT	1/year	24 Hr. Composite
<i>Pimephales promelas</i>	REPORT	REPORT	1/year	24 Hr. Composite

¹ If chlorine is used to achieve the limitation on Fecal Coliform Bacteria, the effluent shall contain no more than 0.75 mg/l TRC after dechlorination and prior to the final disposal at any one time monitored by grab sample.

- Municipal Water Pollution Prevention Requirements
- Contributing Industries and Pretreatment Requirements
- 48 Hour Acute Biomonitoring Requirements for Freshwater Requirements

XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:

A) Inspections

A review of the files indicates that the following recent inspections were performed for this facility:

Date: June 11, 2002

Inspector: David Frazier, LDEQ/OEC/Southeast Regional Office/Surveillance

Findings:

S	Permit	S	Flow Measurement	U	Operation & Maintenance	N	CSO/SSO
S	Records/Reports	U	Self-Monitoring Program	S	Sludge Handling/Disposal	N	Pollution Prevention
S	Facility Site Review	N	Compliance Schedules	N	Pretreatment	N	Multimedia
S	Effluent/Receiving Waters	S	Laboratory	S	Storm Water	N	Other:

S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated

1. Sample refrigerator was not maintaining a proper temperature...temperature was 10°C...the required temperature is 4°C...Mr. Moore said he would replace the unit when he was told about the problem.
2. Collection system is still experiencing I & I problems.
3. Since the last inspection a total of 4,549,908 gallons of sewage have overflowed the collection system.

DATE	GALLONS	CAUSE
5/3/2001	144	main line blockage
5/5/2001	288	main line blockage
5/28/2001	875	electrical failure at the lift station
6/5/2001	175,491	heavy rain from tropical storm Allison
6/6/2001	580,948	heavy rain from tropical storm Allison
6/7/2001	112,776	heavy rain from tropical storm Allison
6/8/2001	189,594	heavy rain from tropical storm Allison
6/9/2001	751,262	heavy rain from tropical storm Allison
6/11/2001	1,732,574	heavy rain from tropical storm Allison
6/12/2001	199,680	heavy rain from tropical storm Allison
6/22/2001	56,000	cracked force main
6/27/2001	384	electrical transformer failure
7/7/2001	125	mechanical failure at the lift station
7/8/2001	4,125	cracked force main
8/2/2001	1,500	mechanical failure at the lift station
8/8/2001	648,260	heavy rainfall
9/13/2001	32	broken force main
12/8/2001	9,600	mechanical failure at the lift station
1/21/2002	67,500	water jetting and televising a line
1/22/2002	18,750	water jetting and televising a line

- There is a storm water pumping station located at the intersection of the Suburban Canal and Canal No. 4 also called the West Napoleon Canal, that is capable of pumping storm water to the headworks of the treatment plant.
- A check on the calibration of the flow meter is accomplished by timing the filling of a known and fixed volume...the most recent check was on 10/8/2001...the error was 0.18%.
- The commercial laboratory will be changed from Laboratory Technology to Environmental Enterprises by the end of 2002...the new laboratory is located at 58485 Pearl Acres in Slidell.

Date: March 10, 2005

Inspector: Mark Stansbury, LDEQ/OEC/Southeast Regional Office/Surveillance

Findings:

- The last inspection was February 16, 2004.
- A permit application was submitted to LDEQ in February 2005.
- The plant was operating satisfactory at the time of the inspection.
- A review of the DMRs for the year 2004 revealed no excursions.
- The effluent was found to be well treated...disinfection is with sodium hypochlorite...
- Sludge is removed and processed with filter presses and disposed of in the River Birch Landfill...sludge records are maintained.
- Flow is measured using a magnetic flow tube and flow records and flow meter calibration records are monitored...last recorded calibration was 10/26/2004.
- The collection system is still experiencing some I and I problems...several collection system overflows were experienced and reported to LDEQ for the end of 2004.
- Lab procedures appear to be satisfactory.

B) Administrative Orders, Compliance Orders, and Warning Letters

A review of the files indicates the following recent enforcement actions administered against this facility:

WARNING LETTER

Date: September 5, 2002

Enforcement Tracking Number: WE-L-02-0839

Findings:

On... June 11, 2002, an inspection... was conducted to determine compliance with the Louisiana Environmental Quality Act and supporting regulations. The inspection report, noted areas of concern... encourage review of the findings and immediately take any and all steps to ensure compliance with all environmental regulations...

C) DMR Review

A review of the discharge monitoring reports for the period beginning **January 1, 2002** through **March 31, 2004** has revealed that the facility has had no effluent violations.

XII. ADDITIONAL INFORMATION:

The Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon water quality studies. These studies may indicate the need for advanced wastewater treatment. Studies of similar dischargers and receiving water bodies have resulted in monthly average effluent limitations of 5 mg/l CBOD₅, and 2 mg/l NH₃-N. Therefore, prior to upgrading or expanding this facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

The Department has reviewed and evaluated the effluent analyses submitted by the permittee on February 28, 2005 and August 1, 2005. As a result, arsenic, copper, zinc, bromodichloromethane, and chloroform were found present in the effluent at levels above the MQL. A water quality screen was performed, which indicated that no effluent limitations for these priority pollutants are required for this facility.

According to Sector T of the *LPDES Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activities*, Permit Number: LAR050000, domestic sewage treatment works with a design flow of 1.0 MGD or more are required to prepare, implement, and maintain a Storm Water Pollution Prevention Plan (SWP3) for all storm water discharges from the facility (See Section D. Storm Water Discharge Requirements in the permit). Based on Best Professional Judgment and in accordance with good engineering practices, Sector T requirements have been incorporated into this permit.

The nearest drinking water intake, is East Jefferson Waterworks District #1 in Metairie located at 105.40 M.A.H.P. on the descending east bank, 6.6 miles from the discharge point(s). Nearby potable water industrial intakes include Domino (Amstar) Sugar Corporation, in Chalmette located at 90.8 M.A.H.P. and Calciner Industries, Inc., in Chalmette located at 89.3 M.A.H.P. As per the 2004 305(b) Report, in 2002, 3,997 samples were collected and analyzed for the 26 (problematic organic) compounds. Of the samples analyzed no compounds were detected.

Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the design capacities of 33 MGD.

Effluent loadings are calculated using the following example:

$$\text{BOD}_5: 8.34 \text{ gal/lb} \times 33 \text{ MGD} \times 30 \text{ mg/l} = 8256.6 \text{ lb/day}$$

At present, the **Monitoring Requirements, Sample Types, and Frequency of Sampling** as shown in the permit for Outfall 001 are standard for facilities of flows over 33 MGD.

Effluent Characteristics	Monitoring Requirements	
	Measurement Frequency	Sample Type
Flow	Continuous	Recorder
Biochemical Oxygen Demand (BOD ₅)	1/day	12 Hour Composite
Total Suspended Solids (TSS)	1/day	12 Hour Composite
Fecal Coliform Bacteria	1/day	Grab
pH	1/day	Grab
Biomonitoring		
<i>Daphnia pulex</i>	1/quarter	24 Hour Composite
<i>Pimephales promelas</i>	1/quarter	24 Hour Composite
Toxic Substances	1/6 months	24 Hour Composite

Pretreatment Requirements

Based upon consultation with LDEQ pretreatment personnel, it is recommended that LDEQ Option 2A Pretreatment Language be included in LPDES Permit LA0066630. This language is established for municipalities with industrial users on their collection system and with an approved pretreatment program. This recommendation is in accordance with 40 CFR Part 403 Regulations and the Best Professional Judgement (BPJ) of the reviewer (Pretreatment Evaluation and Recommendation Report to Berthelot from Reboul, May 27, 2005).

Pollution Prevention Requirements

The permittee shall institute or continue programs directed towards pollution prevention. The permittee shall institute or continue to improve the operating efficiency and extend the useful life of the facility. The permittee will complete an annual Environmental Audit Report **each year** for the life of this permit according to the schedule below. The permittee will accomplish this requirement by completing an Environmental Audit Form, which has been attached to the permit. All other requirements of the Municipal Wastewater Pollution Prevention Program are contained in Part II of the permit.

The audit evaluation period is as follows:

Audit Period Ends	Audit Period Begins	Audit Report Completion Date
12 Months from Audit Period Beginning Date	Effective Date of the Permit	3 Months from Audit Period Ending Date

XIII. TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Statement of Basis.

XIV. REFERENCES:

Louisiana Water Quality Management Plan, Vol. 8, "Wasteload Allocations and Discharger Inventory", Louisiana Department of Environmental Quality, 1992.

Louisiana Water Quality Management Plan, Vol. 5-B, "Water Quality Inventory", Louisiana Department of Environmental Quality, 1998.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards", Louisiana Department of Environmental Quality, 2004.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program", Louisiana Department of Environmental Quality, 2004.

Low-Flow Characteristics of Louisiana Streams, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

Louisiana Pollutant Discharge Elimination System (LPDES) Permit Application to Discharge Wastewater, Jefferson Parish Department of Sewerage, East Bank Wastewater Treatment Plant, August 30, 2004.

APPENDIX I

APPENDIX I

Numeric Toxic Limits: LDEQ has reviewed and evaluated the effluent analyses submitted by the permittee on February 28, 2005 and August 1, 2005, and examined the following pollutants that are regulated by LAC 33:IX.1113.C.6., in accordance with the implementation procedures outlined under the *Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards*, October 30, 1995. Please see Appendix B-1, Water Quality Screen Spreadsheet.

Pollutant	Ce ¹	Ce x 2.13 ²	Water Quality Based Limit ³	Drinking Water Source	Permit Limit?
Arsenic	12.3	26.199	28276.622 µg/l	Yes	No
Copper	18.9	40.257	3562.8386 µg/l	Yes	No
Zinc	46.8	99.684	26700.912 µg/l	Yes	No
Bromodichloromethane	12	25.56	9177.8517 µg/l	Yes	No
Chloroform	22.3	47.499	113482.79 µg/l	Yes	No

1. Pollutant concentration results were presented in lab analysis submitted by the permittee. All pollutants calculated in µg/l.
2. For the reported effluent concentrations (Ce) it is estimated that 95% of the concentrations of chemicals taken over time will be 2.13 times the Ce or less.
3. The water quality based limit is the maximum allowable instream concentration for that pollutant to be in compliance with water quality standards.

The following steps were used in evaluating the potential toxicity of the analyzed pollutants (see Appendix B-1):

- i. An evaluation of the applicability of the effluent data.

Results of the PPS were entered and compared to EPA's Minimum Quantification Levels (MQL's) to determine the potential presence of the respective toxic pollutant. Those pollutants with reported laboratory Method Detection Levels (MDL's), which exceed their respective EPA MQL's are determined to be reasonably present in the effluent and an evaluation of their potential toxicity is determined. Those pollutants with MDLs less than the MQL are determined to be not potentially present in the effluent and eliminated from further evaluation.

- ii. Calculation of permit limits based on applicable water quality standards.

Applicable water quality criteria are listed in the Appendix B-1 in Columns 12-14. These values were used to calculate the Waste Load Allocations (WLA's) for each of the toxic pollutants. The WLA is the maximum allowable concentration of a pollutant necessary to meet the respective water quality criteria. The WLAs are calculated as described in the State's Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, dated October 30, 1995, as follows (Copper is used as the example pollutant for the following calculations):

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Complete Mix Balance Model for Waste Load Allocation

Qe	=	plant effluent, MGD = 33 MGD
Qr	=	critical flow of receiving stream, 141955 cfs
Fs	=	MZ, ZID flow fraction, LAC 33:IX.1115.D.7 and 8 (MZ = 0.3333333, and ZID = 0.0333333)
Cr	=	numerical criteria value from LAC 33:IX.1113, Table 1
Cu	=	ambient instream concentration for pollutant. In the absence of accurate supporting data, assume Cu = 0
WLA	=	concentration for pollutant at end-of-pipe based on aquatic life and human health numerical criteria (site specific dilution type)
LTA	=	long term average, units same as WLA
WQBL	=	effluent water quality based limit.

$$\text{Dilution factor} = \frac{Q_e}{(Q_r F_s + Q_e)}$$

$$\text{Dilution factor (acute)} = \frac{33 \text{ MGD}}{(141955 \text{ cfs})(0.6463 \text{ MGD/cfs})(0.0333333 \text{ cfs}) + 33 \text{ MGD}} = 0.0106755$$

$$\text{Dilution factor (chronic)} = \frac{33 \text{ MGD}}{(141955 \text{ cfs})(0.6463 \text{ MGD/cfs})(0.3333333 \text{ cfs}) + 33 \text{ MGD}} = 0.0010779$$

$$\text{Dilution factor (human health)} = \frac{33 \text{ MGD}}{(141955 \text{ cfs})(0.6463 \text{ MGD/cfs})(0.3333333 \text{ cfs}) + 33 \text{ MGD}} = 0.0003596$$

$$\text{WLA} = (\text{Cr/Dilution factor}) - (F_s Q_r C_u / Q_e)$$

iii. Conversion of dissolved metals criteria for aquatic life to total metals.

Metals criteria for aquatic life protection are based on dissolved metals concentrations and hardness values averaged from data compilations contained in the Louisiana Water Quality Data Summary. A dissolved to total metal conversion will be implemented. Hardness and TSS are a function of the conversion. This involves determining a linear partition coefficient for the metal of concern and using this to determine the fraction of metal dissolved, so that the dissolved metal ambient criteria may be translated to a total effluent limit. The average hardness value used for the analysis is 150.5 mg/l CaCO₃ (USGS data). The 15th percentile TSS value is 23 mg/l. The formula for converting dissolved metals to total metals for streams and lakes are provided below.

K _p	=	Linear partition coefficient
K _{po}	=	found in Table A below
α	=	found in Table A below
TSS	=	total suspended solids concentration found in receiving stream or approximation thereof (nearest most representative site), lowest 15th percentile, units in mg/l
C _D /C _T	=	Fraction of metal dissolved
Cr	=	Dissolved criteria value for metal in water quality standards

$$K_p = K_{po} \times TSS^\alpha$$

$$\text{then, } \frac{C_D}{C_T} = \frac{1}{1 + (K_p)(TSS)(10^{-6})}$$

$$\frac{C_D}{C_T} = \frac{1}{1 + (1.04 \times 10^6)(23)^{-0.74}} = 0.298500368$$

therefore,

$$\text{Total Metal} = \frac{C_T}{(C_D/C_T)} = 3.3500796$$

TABLE A
LINEAR PARTITION COEFFICIENTS
FOR PRIORITY METALS IN STREAMS AND LAKES
(Delos et.al, 1984) (*1)

METAL	STREAMS		LAKES	
	K_{PD}	α	K_{PD}	α
Arsenic	0.48×10^6	-0.73	0.48×10^6	-0.73
Cadmium	4.00×10^6	-1.13	3.52×10^6	-0.92
Chromium III (*2)	3.36×10^6	-0.93	2.17×10^6	-0.27
Copper	1.04×10^6	-0.74	2.85×10^6	-0.9
Lead	2.80×10^6	-0.8	2.04×10^6	-0.53
Mercury	2.90×10^6	-1.14	1.97×10^6	-1.17
Nickel	0.49×10^6	-0.57	2.21×10^6	-0.76
Zinc	1.25×10^6	-0.7	3.34×10^6	-0.68

(*1) Delos, C. G., W. L. Richardson, J. V. DePinto, R. B. Ambrose, P. W. Rogers, K. Rygwelski, J. P. St. John, W. J. Shaughnessey, T. A. Faha, W. N. Christie. *Technical Guidance for performing Waste Load Allocations, Book II: Streams and Rivers*. Chapter 3: Toxic Substances, for the U. S. Environmental Protection Agency. (EPA-440/4-84-022).

(*2) Linear partition coefficients shall not apply to the Chromium VI numerical criterion. The approved analytical method for Chromium VI measures only the dissolved form. Therefore, permit limits for Chromium VI shall be expressed in the dissolved form. See 40 CFR § 122.45(c)(3).

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Page 4

$$WLA_{a,c,h} = (Cr/Dilution\ factor) - (FsQrCu/Qe) \quad Cu = 0$$

$$WLA_{acute} = (90.73272861 \Phi g/l / 0.010675532) = 8499.129468 \mu g/l$$

$$WLA_{chronic} = (58.29934052 \Phi g/l / 0.001077908) = 54085.63673 \mu g/l$$

$$WLA_{human\ health} = (3350.079622 \Phi g/l / 0.000359561) = 9317138.461 \mu g/l$$

iv. Calculation of Long Term Averages (LTA's) and Permit Limits.

Comparison of the reported effluent data (converted to the 95th percentile) to the calculated effluent limitations. Long term averages are listed in the Appendix B-1 in Columns 15-17.

Long term averages are calculated for each WLA (based on aquatic and human health criteria). The LTA's are calculated as follows:

$$LTA_a = WLA_a \times 0.32$$

$$LTA_c = WLA_c \times 0.53$$

$$LTA_{acute} = 8499.129468 \Phi g/l \times 0.32 = 2719.72143 \mu g/l$$

$$LTA_{chronic} = 54085.63673 \Phi g/l \times 0.53 = 28665.38747 \mu g/l$$

$$LTA_{human\ health} = WLA_{human\ health} = 9317138.461 \mu g/l$$

A comparison of each LTA is made and the lowest (most restrictive) is selected to calculate the effluent limitations. The most limiting LTA is listed in Appendix B-1, Column 18.

Calculation of permit limits if aquatic life LTA is more limiting:

$$\text{Monthly Average} = \text{Min}(LTA_a, LTA_c) \times 1.31$$

$$\text{Monthly Average} = \text{Min}(LTA_{hh}) \times 1$$

$$\text{Daily Maximum} = \text{Min}(LTA_a, LTA_c) \times 3.11$$

$$\text{Daily Maximum} = \text{Min}(LTA_{hh}) \times 2.38$$

$$\text{Monthly Average} = 2719.72143 \Phi g/l \times 1.31 = 3562.8355073 \mu g/l$$

$$\text{Daily Maximum} = 2719.72143 \Phi g/l \times 3.11 = 8458.333647 \mu g/l$$

The resulting allowable effluent concentration is converted to a mass value using the following formula:

$$\text{Monthly Average (lbs/day)} = (3.5628355073 \text{ mg/l}) \times 8.34 \times 33 \text{ MGD} = 980.5634688 \text{ lbs/day}$$

$$\text{Daily Maximum (lbs/day)} = (8.458333647 \text{ mg/l}) \times 8.34 \times 33 \text{ MGD} = 2327.902586 \text{ lbs/day}$$

Comparison of the reported effluent data (converted to 95th percentile) is made to the calculated effluent limitations. Water Quality Based limits are listed in Appendix B-1, Columns 19-22.

In accordance with the State of Louisiana's implementation procedures, the reported effluent concentration is compared to the calculated daily average concentration. If the effluent concentration is greater than the calculated daily average concentration, then a reasonable potential exists and an effluent limitation for the pollutant of concern is imposed in the permit. (Please refer to Appendix B-1 for the calculated daily average concentration listed in Column 19 and the effluent concentration listed in Column 3.)

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The discharge is considered to pose a reasonable potential to cause a water quality excursion if the estimated 95th percentile of a pollutant in the effluent will result in an instream waste concentration, which is above the applicable State water quality criterion. The 95th percentile of possible effluent concentrations are estimated as follows:

$$C_{95} = C_{\text{mean}} \cdot \exp (1.645 \cdot \Phi - 0.5 \cdot \Phi^2)$$

where: 1.645 = normal distribution factor at 95th percentile

$$\Phi^2 = \ln(CV^2 + 1)$$

if CV is assumed = 0.6,

$$\Phi^2 = .307$$

The ratio of the estimated 95th percentile value to the mean (C_{95}/C_{mean}) is calculated:

$$C_{95}/C_{\text{mean}} = 2.13$$

Based upon review of the permittee's effluent data, there are no pollutants present or potentially present in the effluent discharge in such concentrations, which would cause an exceedance of Louisiana's Water Quality Standards.

APPENDIX B-1

Water Quality Screen

Water Quality Screen for

Jefferson Parish Dept. of Sewerage, East Bank WWTP

Input variables:
 Receiving Water Characteristics:

Receiving Water Name=
 Critical flow (Qr) cfs=
 Harm. mean/avg tidal cfs=
 Drinking Water=1 HHNPCR=2
 Marine, 1=y, 0=n
 Rec. Water Hardness=
 Rec. Water TSS=
 Fish/Specific=1, Stream=0
 Diffuser Ratio=

Effluent Characteristics:

Permittee=
 Permit Number=
 Facility flow (Qef),MGD=

Outfall Number =
 Eff. data, 2=lbs/day
 MQL, 2=lbs/day
 Effluent Hardness=
 Effluent TSS=

WQBL ind 0=y, 1=n
 Acute/Crit ratio 0=n, 1=y
 Aquatic acute only 1=y, 0=n

Page Numbering/Labeling
 Appendix
 Page Numbers 1=y, 0=n
 Input Page # 1=y, 0=n

Fischer/Site Specific inputs:
 Pipe=1, Canal=2, Specific=3
 Pipe width, feet
 ZID plume dist, feet
 MZ plume dist, feet
 HHnc plume dist, feet
 HHnc plume dist, feet

JID Dilution =
 F/specific MZ Dilution =
 F/specific HHnc Dilution =
 F/specific HHc Dilution =

Mississippi River (River Mile 112)

141955

Dilution:
 ZID Fs =
 MZ Fs =
 Critical Qr (MGD)=
 Harm. Mean (MGD)=
 ZID Dilution =
 MZ Dilution =
 HHnc Dilution=
 HHc Dilution=
 ZID Upstream =
 MZ Upstream =
 MZ/hnc Upstream=

0.033333333
 0.333333333
 91745.5165
 91745.5165
 0.010675521
 0.001077909
 0.000359561
 0.000359561
 92.67223889
 926.7223889
 2780.157167

Toxicity Dilution Series:
 Biomonitoring dilution:
 Dilution Series Factor:
 Dilution No. 1
 Dilution No. 2
 Dilution No. 3
 Dilution No. 4
 Dilution No. 5
 Partition Coefficients, Dissolved-->Total

0.010779087
 0.75
 1.437%
 1.0779%
 0.8084%
 0.6063%
 0.4547%

Jefferson Parish Dept. of Sewerage, East Bank WWTP

LA006630

33

MZ/hnc Upstream=
 ZID Hardness=
 MZ TSS=
 MZ TSS=

2780.157167

N/A

Multipliers:
 W/LAa --> LTAA
 W/LAc --> LTAc
 LTA a,c-->WQBL avg
 LTA h -->WQBL max
 WQBL limit/report

0.32
 0.53
 1.31
 3.11
 2.38

Appendix B-1

1

W/LA Fraction
 WQBL Fraction

1

Conversions:

ug/L-->lbs/day Qef
 ug/L-->lbs/day Qeo
 ug/L-->lbs/day Qr
 lbs/day-->ug/L Qeo
 lbs/day-->ug/L Qef
 diss-->tol 1=y, 0=n
 Cu diss-->tol 1=y, 0=n
 cfs-->MGD

0.27522
 0
 1183.9047
 3.633456871
 3.633456871
 1
 1
 0.6463

METALS
 Total Arsenic
 Total Cadmium
 Chromium III
 Chromium VI
 Total Copper
 Total Lead
 Total Mercury
 Total Nickel
 Total Zinc
 Aquatic Life, Dissolved
 Metal Criteria, ug/L
 METALS
 Arsenic
 Cadmium
 Chromium III
 Chromium VI
 Copper
 Lead
 Mercury
 Nickel
 Zinc
 Site Specific Multiplier Values:
 CV =
 N =
 W/LAa --> LTAA
 W/LAc --> LTAc
 LTA a,c-->WQBL avg
 LTA a,c-->WQBL max
 LTA h --> WQBL max

FW
 2.119200133
 3.660941781
 5.184660464
 1
 3.350079622
 6.242079446
 2.869631863
 2.88685727
 4.202051878
 ACUTE
 360
 53.42882311
 2427.059608
 16
 28.21224258
 137.383243
 2004.225076
 165.4602395
 CHRONIC
 190
 1.563557719
 289.2917707
 11
 18.14566076
 5.353630914
 0.012
 222.8085248
 149.8644054

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Toxic Parameters	Cu Effluent Tech Conc. ug/L	Effluent Tech (Avg) ug/L	Effluent (Max) ug/L	MQL Effluent I=No 95% 0=95 %	95th % Non-Tech estimate ug/L	Numerical Criteria Acute FW ug/L	Numerical Criteria Chronic FW ug/L	HHNDW Indicator ug/L	HH Carcinogen Indicator "C"	
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10		1290	645	2.5	C	
Toluene				10		1270	635	46200		
1,1,1-Trichloroethane				10		5280	2640			
1,1,2-Trichloroethane				10		1800	900	6.9	C	
Trichloroethylene				10		3900	1950	21	C	
Vinyl Chloride				10				35.8	C	
ACID COMPOUNDS										
2-Chlorophenol				10		258	129	126.4		
2,4-Dichlorophenol				10		202	101	232.6		
BASE NEUTRAL COMPOUNDS										
Benzidine				50		250	125	0.00017	C	
Hexachlorobenzene				10				0.00025	C	
Hexachlorobutadiene				10		5.1	1.02	0.11	C	
PESTICIDES										
Aldrin				0.05		3		0.0004	C	
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05		5.3	0.21	0.2	C	
Chlordane				0.2		2.4	0.0043	0.00019	C	
4,4'-DDT				0.1		1.1	0.001	0.00019	C	
4,4'-DDE				0.1		52.5	10.5	0.00019	C	
4,4'-DDD				0.1		0.03	0.006	0.00027	C	
Dieldrin				0.1		2.5	0.0019	0.00005	C	
Endosulfan				0.1		0.22	0.056	0.64		
Endrin				0.1		0.18	0.0023	0.26		
Hepachlor				0.05		0.52	0.0038	0.00007	C	
Toxaphene				5		0.73	0.0002	0.00024	C	
Other Parameters:										
Fecal Colif. (col/100ml)										
Chlorine					0	0.99897	19	11		
Ammonia										
Chlorides										
Sulfates										

0.469

0

0.99897

19

11

	(*)1	(*)12	(*)13	(*)14	(*)15	(*)16	(*)17	(*)18	(*)19	(*)20	(*)21	(*)22	(*)23
Toxic Parameters	WLaa Acute	WLAC Chronic	WLAh HtHNDW	LTAa Acute	LTAc Chronic	LTAh HHNDW	A.C.HH Limiting	WOBL Avg	WOBL Max	WOBL Avg	WOBL Max	WOBL Need	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day		
Tetrachloroethylene	120337.1882	598380.9408	6952.917917	38667.90021	317141.8986	6952.917917	6952.917917	16547.94464	1913.582069	4554.325324			
Toluene	118963.7434	589103.7169	128489923.1	38068.39788	312224.97	128489923.1	38068.39788	49869.60123	118392.7174	13725.11165	32584.04369		
1,1,1-Trichloroethane	494589.4213	2449187.107	---	158268.6148	1298069.167	---	158268.6148	207331.8854	49222.153921	57061.88151	135469.5202		
1,1,2-Trichloroethane	166610.03	834950.15	19190.05345	53955.2096	442523.5795	19190.05345	19190.05345	19190.05345	45672.32721	5281.486511	12569.9379		
Trichloroethylene	365321.7317	1809038.658	58404.5105	116902.9541	958801.0889	58404.5105	58404.5105	58404.5105	139002.735	16074.08938	38256.33272		
Vinyl Chloride	---	---	99565.78457	---	---	99565.78457	99565.78457	99565.78457	236966.5673	27402.49523	65217.93864		
ACID COMPOUNDS													
2-Chlorophenol	24167.43763	119676.1882	351539.5299	7733.580043	63428.37973	351539.5299	7733.580043	10130.98986	24051.43393	2788.251028	6619.435647		
2,4-Dichlorophenol	18921.79226	93699.96128	646899.483	6054.973522	49660.97948	646899.483	6054.973522	7932.015314	18830.96765	2183.049255	5182.658917		
BASE NEUTRAL COMPOUNDS													
Benzidine	23418.05972	115965.2986	0.472798418	7493.779111	61461.60826	0.472798418	0.472798418	1.125260236	0.130123581	0.309694122			
Hexachlorobenzene	---	---	0.695291792	---	---	0.695291792	0.695291792	1.654794464	0.191358207	0.455432532			
Hexachlorobutadiene	477.7284183	946.2768367	305.9283883	152.8730939	501.5267234	305.9283883	152.8730939	200.263753	475.4353219	55.11659009	130.8493093		
PESTICIDES													
Aldrin	281.0167167	---	1.112466867	89.92534933	---	1.112466867	1.112466867	2.647671143	0.306173131	0.728692052			
Hexachlorocyclohexane (gamma BHC, Lindane)	496.4628661	194.8217017	556.2334333	158.8681172	103.2555019	556.2334333	103.2555019	135.2647075	321.1246109	37.22755279	88.3799154		
Chlordane	224.8133733	3.989206772	0.528421762	71.94027947	2.114279324	0.528421762	0.528421762	1.257643793	0.145432227	0.346128725			
4,4'-DDT	103.0394628	0.927723289	0.528421762	91.9692866	0.491692866	0.644117655	1.529164814	0.177274061	0.42085674				
4,4'-DDE	4917.792542	9741.085083	0.528421762	1573.693613	5162.775094	0.528421762	0.528421762	1.257643793	0.145432227	0.346128725			
4,4'-DDD	2.810167167	5.566334333	0.750915135	0.899255493	2.950157197	0.750915135	0.750915135	1.787178021	0.206666863	0.491867135			
Dieldrin	234.1805972	1.762672339	0.139058358	74.93779111	0.934216446	0.139058358	0.139058358	0.33095893	0.038271641	0.091066506			
Ethiondisulfan	20.60789256	51.95245378	1779.946987	6.594525618	27.5348005	1779.946987	6.594525618	8.638828559	20.50897467	2.377578396	5.6644700502		
Endosulfan	16.861003	2.133761494	723.1034633	5.39552096	1.130893592	723.1034633	1.130893592	1.481470606	3.517079071	0.40773034	0.967970502		
Heptachlor	48.70956422	3.525345078	0.194681702	15.58706055	1.868432891	0.194681702	0.194681702	0.46334245	0.053580298	0.127321109			
Toxaphene	68.38073439	0.185544478	0.66748012	21.881835	0.098338573	0.66748012	0.098338573	0.128823531	0.305832963	0.035454812	0.084171348		
Other Parameters:													
Fecal Colif (col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no	
Chlorine	1779.772339	10204.94628	---	569.5272124	5408.621527	---	569.5272124	746.0806483	1771.229631	205.336316	487.477819	no	
Ammonia	---	---	---	---	---	---	---	---	---	---	---	no	
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no	
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no	

APPENDIX B-2

**Documentation and Explanation of
Water Quality Screen and
Associated Lotus Spreadsheet**

APPENDIX B-2
LA0066630/AI 19537/PER20050001

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Mississippi River
Critical Flow, Q_{rc} (cfs): 141,955 cfs
Harmonic Mean Flow, Q_{rh} (cfs): cfs
Segment(s) No.: 070301
Receiving Stream Hardness: 150.5 mg/l
Receiving Stream TSS: 23 mg/l
MZ Stream Factor, F_s : cfs
Plume distance, P_f : N/A

Effluent Characteristics:

Company: Jefferson Parish Dept. of Sewerage / East Bank WWTP
Facility flow, Q_e (MGD): 33 MGD
Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, P_w : N/A
Permit Number: LA0066630

Variable Definition:

Q_{rc} , critical flow of receiving stream: 141,955 cfs
 Q_{rh} , harmonic mean flow of the receiving stream, cfs
 P_f = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
 P_w = Pipe width or canal width in feet
 Q_e , total facility flow, 33 MGD
 F_s , stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
 C_u , ambient concentration, ug/L
 C_r , numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

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Formulas used in aquatic life water quality screen (dilution type WLA):

Streams: Dilution Factor =
$$\frac{Q_e}{(Q_{rc} \times 0.6463 \times F_s + Q_e)}$$

WLA a,c,h =
$$\frac{C_r}{\text{Dilution Factor}} - \frac{(F_s \times Q_{rc} \times 0.6463 \times C_u)}{Q_e}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

Discharge from a canal:

Critical
Dilution =
$$\frac{(2.8) P_w \pi^{1/2}}{P_f}$$

Critical
Dilution =
$$\frac{(2.38)(P_w^{1/2})}{(P_f)^{1/2}}$$

WLA =
$$\frac{(C_r - C_u) P_f}{(2.8) P_w \pi^{1/2}}$$

WLA =
$$\frac{(C_r - C_u) P_f^{1/2}}{2.38 P_w^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

Dilution Factor =
$$\frac{Q_e}{(Q_{rc} \times 0.6463 + Q_e)}$$

WLA a,c,h =
$$\frac{C_r}{\text{Dilution Factor}} - \frac{(Q_{rc} \times 0.6463 \times C_u)}{Q_e}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

Dilution Factor =
$$\frac{Q_e}{(Q_{rh} \times 0.6463 + Q_e)}$$

WLA a,c,h =
$$\frac{C_r}{\text{Dilution Factor}} - \frac{(Q_{rh} \times 0.6463 \times C_u)}{Q_e}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

Discharge from a canal:

Critical
Dilution =
$$\frac{(2.8) P_w \pi^{1/2}}{P_f}$$

Critical
Dilution =
$$\frac{(2.38)(P_w^{1/2})}{(P_f)^{1/2}}$$

WLA =
$$\frac{(C_r - C_u) P_f^*}{(2.8) P_w \pi^{1/2}}$$

WLA =
$$\frac{(C_r - C_u) P_f^{1/2*}}{2.38 P_w^{1/2}}$$

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* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.
If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{Cr - Cu}{\text{site specific dilution}}$$

Longterm Average Calculations:

$$LTAA = WLAa \times 0.32$$

$$LTAc = WLAc \times 0.53$$

$$LTAh = WLAh$$

WQBL Calculations:

Select most limiting LTA to calculate daily max and daily avg WQBL

If aquatic life LTA is more limiting:

$$\text{Daily Maximum} = \text{Min}(LTAA, LTAc) \times 3.11$$

$$\text{Monthly Average} = \text{Min}(LTAA, LTAc) \times 1.31$$

If human health LTA is more limiting:

$$\text{Daily Maximum} = LTAh \times 2.38$$

$$\text{Monthly Average} = LTAh$$

Mass Balance Formulas:

$$\text{mass (lbs/day)}: (\text{ug/L}) \times 1/1000 \times (\text{flow, MGD}) \times 8.34 = \text{lbs/day}$$

$$\text{concentration(ug/L)}: \frac{\text{lbs/day}}{(\text{flow, MGD}) \times 8.34 \times 1/1000} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

- (*1) Parameter being screened.
- (*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (*3) Monthly average effluent value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (*4) Daily maximum value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If

this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

- (*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) – (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations using the following formula: $(\text{Effluent Hardness} \times \text{ZID Dilution} + \text{Receiving Stream Hardness} \times (1 - \text{ZID Dilution}))$. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations using the following formula: $(\text{Effluent TSS} \times \text{ZID Dilution} + \text{Receiving Stream TSS} \times (1 - \text{ZID Dilution}))$.

Hardness Dependent Criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Arsenic	$1 + 0.48 \times \text{TSS}^{-0.73} \times \text{TSS}$
Cadmium	$1 + 4.00 \times \text{TSS}^{-1.13} \times \text{TSS}$
Chromium III	$1 + 3.36 \times \text{TSS}^{-0.93} \times \text{TSS}$
Copper	$1 + 1.04 \times \text{TSS}^{-0.74} \times \text{TSS}$
Lead	$1 + 2.80 \times \text{TSS}^{-0.80} \times \text{TSS}$
Mercury	$1 + 2.90 \times \text{TSS}^{-1.14} \times \text{TSS}$
Nickel	$1 + 0.49 \times \text{TSS}^{-0.57} \times \text{TSS}$
Zinc	$1 + 1.25 \times \text{TSS}^{-0.70} \times \text{TSS}$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Copper	$1 + (10^{4.86} \times \text{TSS}^{-0.72} \times \text{TSS}) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times \text{TSS}^{-0.85} \times \text{TSS}) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times \text{TSS}^{-0.52} \times \text{TSS}) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

- (*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations using the following formula: (Effluent Hardness X MZ Dilution + Receiving Stream Hardness X (1 - MZ Dilution)). Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used,

however, a flow weighted TSS may be determined in site-specific situations using the following formula: (Effluent TSS X MZ Dilution + Receiving Stream TSS X (1-MZ Dilution)).

Hardness dependent criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.8545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

- (*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAa formulas for streams:

$$WLAa = (Cr/Dilution\ Factor) - \frac{(Fs \times Q_{rc} \times 0.6463 \times Cu)}{Q_e}$$

Dilution WLAa formulas for static water bodies:

$$WLAa = (Cr - Cu)/Dilution\ Factor$$

Cr represents aquatic acute numerical criteria from column (*8).

If Cu data is unavailable or inadequate, assume Cu=0

- (*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAc formula:

$$\text{WLAc} = (\text{Cr}/\text{Dilution Factor}) - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Dilution WLAc formulas for static water bodies:

$$\text{WLAc} = (\text{Cr} - \text{Cu})/\text{Dilution Factor}$$

Cr represents aquatic chronic numerical criteria from column (*9).
If Cu data is unavailable or inadequate, assume Cu=0

- (*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$\text{WLAh} = (\text{Cr}/\text{Dilution Factor}) - \frac{(\text{Fs} \times \text{Qrc, Qrh} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Dilution WLAh formulas for static water bodies:

$$\text{WLAh} = (\text{Cr} - \text{Cu})/\text{Dilution Factor}$$

Cr represents human health numerical criteria from column (*10).

If Cu data is unavailable or inadequate, assume Cu=0

- (*15) Long Term Average for aquatic numerical criteria (LTAA). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. $\text{WLAa} \times 0.32 = \text{LTAA}$
- (*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. $\text{WLAc} \times 0.53 = \text{LTAc}$
- (*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. $\text{WLAh} \times 1 = \text{LTAh}$
- (*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation.
- (*19) End of pipe Water Quality Based Limit (WQBL) maximum 30-day monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($\text{LTA}_{\text{limiting aquatic}} \times 1.31 = \text{WQBL}_{\text{daily average}}$). If human health criteria was the most limiting criteria then $\text{LTAh} = \text{WQBL}_{\text{daily average}}$.

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- (*20) End of pipe Water Quality Based Limit (WQBL) 30-day daily maximum in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{\text{limiting aquatic}} \times 3.11 = WQBL_{\text{daily max}}$). If human health criteria was the most limiting criteria then LTA_h is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{\text{limiting aquatic}} \times 2.38 = WQBL_{\text{daily max}}$).
- (*21) End of pipe Water Quality Based Limit (WQBL) maximum 30-day monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Daily average WQBL, $ug/l/1000 \times \text{facility flow, MGD} \times 8.34 = \text{daily average WQBL, lbs/day}$.
- (*22) End of pipe Water Quality Based Limit (WQBL) 30 day daily maximum in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, $ug/l/1000 \times \text{facility flow, MGD} \times 8.34 = \text{daily maximum WQBL, lbs/day}$.
- (*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

WQBL CALCULATIONS

WQBL CALCULATIONS for Jefferson Parish Department of Sewerage East Bank Wastewater Treatment Plant LA0066630, AI 19537

DESIGN CAPACITY (Q_e): 33 MGD
CRITICAL LOW FLOW (7Q10): 141955 cfs.
HARDNESS VALUE: 150.5 mg/L
FIFTEENTH PERCENTILE VALUE FOR TSS: 23 mg/L

PRIORITY POLLUTANT: COPPER

$$\begin{aligned} * \text{ Cu (Acute)} &= e^{(0.9422 [\ln(\text{hardness})] - 1.3844)} \times CF \\ &= e^{(0.9422 [\ln 150.5] - 1.3844)} \times 0.960 \\ &= e^{(0.9422) (5.013963084) - 1.3844} \times 0.960 \\ &= e^{3.339756018} \times 0.960 \\ &= 28.21224259 \times 0.960 \\ &= 27.08375288 \mu\text{g/l} \end{aligned}$$

$$\begin{aligned} * \text{ Cu (Chronic)} &= e^{(0.8545 [\ln(\text{hardness})] - 1.3860)} \times CF \\ &= e^{(0.8545 [\ln 150.5] - 1.3860)} \times 0.960 \\ &= e^{(0.8545) (5.013963084) - 1.3860} \times 0.960 \\ &= e^{2.897428663} \times 0.960 \\ &= 18.12747355 \times 0.960 \\ &= 17.4023746 \mu\text{g/l} \end{aligned}$$

DISSOLVED TO TOTAL METAL CONVERSION

$$\frac{C_D}{C_T} = \frac{1}{1 + (K_p) (TSS) (10^{-6})} \quad K_p = K_{po} \Xi TSS\%$$

$$\begin{aligned} K_p &= 1.04 \times 10^6 \times 23^{(-0.74)} \\ &= 102177.3749 \end{aligned}$$

$$\begin{aligned} \frac{C_D}{C_T} &= \frac{1}{1 + (102177.3749) (23) (10^{-6})} \\ &= \frac{1}{3.350079622} \\ &= 0.298500368 \end{aligned}$$

$$\frac{\text{TOTAL}}{\text{DISSOLVED}} = \frac{C_T}{C_D} = 3.350079622$$

	DISSOLVED	X	C_T / C_D	=	TOTAL
Acute Criteria	27.08375288 $\mu\text{g/l}$	X	3.350079622	=	90.73272861 $\mu\text{g/l}$
Chronic Criteria	17.4023746 $\mu\text{g/l}$	X	3.350079622	=	58.29934052 $\mu\text{g/l}$
Human Health _{nc}	1000 $\mu\text{g/l}$	X	3.350079622	=	3350.079622 $\mu\text{g/l}$

DILUTION CALCULATIONS

$$\text{DILUTION FACTOR} = \frac{Q_e}{Q_r \times F_s + Q_e}$$

$$* \text{ZID (ACUTE)} = \frac{33 \text{ MGD}}{(141955 \text{ cfs})(0.6463 \text{ MGD/cfs})(0.0333333 \text{ cfs}) + 33 \text{ MGD}} = 0.010675532$$

$$* \text{MZ (CHRONIC)} = \frac{33 \text{ MGD}}{(141955 \text{ cfs})(0.6463 \text{ MGD/cfs})(0.3333333 \text{ cfs}) + 33 \text{ MGD}} = 0.001077908$$

$$* \text{HH (HUMAN HEALTH)} = \frac{33 \text{ MGD}}{(141955 \text{ cfs})(0.6463 \text{ MGD/cfs})(1) + 33 \text{ MGD}} = 0.000359561$$

CONCLUDE THAT: 1% of effluent at edge of ZID
0% of effluent at edge of MZ
0% of effluent at edge of HH_{nc}

WASTELOAD ALLOCATION CALCULATIONS

$$\text{WLA} = \frac{C_r}{\text{Dilution}} - \frac{F_s \times C_r \times C_u}{Q_e} \quad C_u = 0$$

$$* \text{WLA}_{\text{ZID}} (\text{ACUTE}) = \frac{90.73272861 \text{ } \mu\text{g/l}}{0.010675532} = 8499.129468 \text{ } \mu\text{g/l}$$

$$* \text{WLA}_{\text{MZ}} (\text{CHRONIC}) = \frac{58.29934052 \text{ } \mu\text{g/l}}{0.001077908} = 54085.63673 \text{ } \mu\text{g/l}$$

$$* \text{WLA}_{\text{HH}} (\text{HUMAN HEALTH}) = \frac{3350.079622 \text{ } \mu\text{g/l}}{0.000359561} = 9317138.461 \text{ } \mu\text{g/l}$$

LTA CALCULATIONS

$$\begin{aligned} * \text{LTA}_{\text{ZID}} (\text{ACUTE}) &= \text{WLA}_{\text{ZID}} \times 0.32 \\ &= 8499.129468 \text{ } \mu\text{g/l} \times 0.32 = 2719.72143 \text{ } \mu\text{g/l} \end{aligned}$$

$$\begin{aligned} * \text{LTA}_{\text{MZ}} (\text{CHRONIC}) &= \text{WLA}_{\text{MZ}} \times 0.53 \\ &= 54085.63673 \text{ } \mu\text{g/l} \times 0.53 = 28665.38747 \text{ } \mu\text{g/l} \end{aligned}$$

$$\begin{aligned} * \text{LTA}_{\text{HH}} (\text{HUMAN HEALTH}) &= \text{WLA}_{\text{HH}} \times 1 \\ &= 9317138.461 \text{ } \mu\text{g/l} \times 1 = 9317138.461 \text{ } \mu\text{g/l} \end{aligned}$$

WQBL CALCULATIONS

LIMITING LTA = 2719.72143 µg/l

*** MONTHLY AVERAGE** = LIMITING LTA X 1.31
= 2719.72143 µg/l X 1.31
= 3562.8355073 µg/l
= 3.5628355073 mg/l X 33 MGD X 8.34 lbs/day = **980.5634688 lbs/day**

*** DAILY MAXIMUM** = LIMITING LTA X 3.11
= 2719.72143 µg/l X 3.11
= 8458.333647 µg/l
= 8.458333647 mg/l X 33 MGD X 8.34 lbs/day = **2327.902586 lbs/day**

PRETREATMENT REQUIREMENTS

PRETREATMENT EVALUATION AND RECOMMENDATION

FACILITY NAME: *Jefferson Parish Department of Sewerage – East Bank WWTP*

CITY: *Physical Location: Harahan
Municipalities/Areas served: Metairie, Jefferson, River Ridge, and other unincorporated areas*

PARISH: *Jefferson*

PERMIT #: *LA0066630*

DESIGN FLOW: *33 MGD*

ACTUAL FLOW: *33.12 MGD*

OTHER POTWs IN SYSTEM: *Marrero WWTP (LA0042048), Bridge City WWTP (LA0042064), Harvey WWTP (LA0042081), Rosethorne WWTP (LA0100846), & Jonathan Davis WWTP (LA0068292)*

SIGNIFICANT INDUSTRIES LISTED IN MANUFACTURERS GUIDE:

Industry Name	Type of Industry	Location	Direct or Indirect Discharger
Acme Paper Box Co. Inc.	Manufactures die cut specialty displays, folding paper, corrugated shipping cartons and boxes	Jefferson	Indirect ¹
Advance Polybag Inc. (PA)	Manufactures plastic grocery bags	Metairie	Indirect ¹
Almet Inc.	Commercial galvanized steel air conditioning duct work	Jefferson	Indirect ¹
American Sprinkler Co. Inc.	Manufactures fire protection sprinkler systems	Metairie	Indirect ¹
ASCO	Distributes petroleum and petroleum products: diesel, gasoline, and oil	Metairie	Indirect ¹
Atlas Blowpipe & Sheet Metal	Manufactures duct work; provides sheet metal and aluminum fabricating services	Metairie	Indirect ¹
BESCO Chemicals Corp.	Industrial and commercial cleaning compounds, solvents, degreasers, rust removers, and paint thinners	Metairie	N/A ²

¹ The discharge is sanitary wastewater only.

² This facility has closed.

Industry Name	Type of Industry	Location	Direct or Indirect Discharger
Carr Stone & Tile Inc.	Manufactures marble, granite, and slate vanity tops, fireplace facings, hearths and wall veneer panels	Jefferson	Indirect ³
Cintas Corp.	Industrial laundry	Harahan	Indirect ⁴
Continental Water Systems	Manufactures water softeners, reverse osmosis units, particulate filters, and filtration equipment	Metairie	Indirect ⁵
CP Louisiana, Inc.	Manufacturer of 55 gallon steel drums	Jefferson	Indirect ⁶
Deep South Blenders Inc.	Manufactures dry and liquid seasonings, blends, and spices	Jefferson	Indirect ³
Delta Petroleum Co. Inc.	Provides blending and processing of unrefined oil	Metairie	Direct ⁷
Diversified Foods and Seasonings, Inc.	Food processing: spice blending, and cooking and packaging of meats, gravies, sauces, and glazes	Metairie	Indirect ⁴
Dixie Produce and Packaging, Inc.	Produce packaging	Harahan	N/A ⁸
EACCO Inc.	Custom metal doors; aluminum, fiberglass and padded seating	Jefferson	Indirect ⁵
Electrical & Control Design	Electronic components, power generating, and distributing controls, instruments	Metairie	Indirect ³
Eli Jewels Inc.	Gold and platinum precious decorative jewelry	Metairie	Indirect ³
Forest Oil Corp.	Provides oil exploration and offshore drilling services	Metairie	Indirect ³
Gulf Engineering LLC	Machine shop manufacturing electronic rotating machinery components, turbo machine parts and repairing and plate sheet fabricating	Jefferson	Indirect ⁵
Gulf States Optical Labs Inc.	Manufactures prescription eyeglasses and safety glasses	Metairie	Indirect ⁵

³ The discharge is sanitary wastewater only.

⁴ The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry. The Control Authority (CA) has permitted this facility as a Significant Industrial User (SIU).

⁵ The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry.

⁶ The process wastewater discharge from this facility is subject to pretreatment categorical standard 40 CFR Part 433, Metal Finishing. The CA has permitted this facility as a Categorical Industrial User (CIU).

⁷ The process wastewater discharges from this facility are authorized under LPDES Permit LA0074535.

⁸ This facility has closed.

Industry Name	Type of Industry	Location	Direct or Indirect Discharger
Louisiana Coca Cola Bottling Co. Limited	Manufacturing, storage, sale, and distribution of coca-cola products	Harahan	Indirect ⁹
Hans Luetkemeier & Son Inc.	Gold and silver plating service: tea sets, gift items, and silverware; vintage watches, estate and antique jewelry	Metairie	Indirect ¹⁰
Hecker Atlas Inc.	Manufactures roofing products	Jefferson	Indirect ¹⁰
Huber Inc.	Hydraulic assembly	Jefferson	Indirect ¹⁰
Huey P Long Bridge Fleet Inc.	Provides ship repair services	Jefferson	N/A ¹¹
Jefferson Orthopedics Inc. (PA)	Artificial limbs, orthopedic braces, arch supports, prosthetic and corrective appliances	Metairie	N/A ¹²
John-Henry Enterprises Inc.	Soap and degreaser blending	Metairie	Indirect ¹³
L M Berry & Co. Inc.	Provides directory publishing services	Metairie	Indirect ¹⁰
Liberty Welding & Iron Works	Manufactures pressure vessels and steel tanks; aluminum and pipe fabricating; steel shearing and cutting	Metairie	Indirect ¹⁰
Llog Exploration Offshore Inc.	Provides gas and oil field exploration services	Metairie	Indirect ¹⁰
M C Media LLC	Monthly magazine publishing	Metairie	Indirect ¹⁰
Maurice French Pastries	Manufactures and retails pastries	Metairie	Indirect ¹⁰
Newpark Resources Inc. (PA)	Provides integrated environmental and drilling services to oil and gas drillers	Metairie	Indirect ¹⁰
ONCRX LLC	Custom oncology pharmaceutical preparation services	Metairie	Indirect ¹⁰
Penny's Auto Chassis Inc.	Leaf springs and suspension system parts	Jefferson	Indirect ¹⁰
Prime Source Building Products	Manufactures building nails, screws, and collated fasteners	Jefferson	Indirect ¹⁰

⁹ The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry. The Control Authority (CA) has permitted this facility as a Significant Industrial User (SIU).

¹⁰ The discharge is sanitary wastewater only.

¹¹ This facility is not connected to the Jefferson Parish – East Bank WWTP.

¹² This facility has closed.

¹³ The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry.

Industry Name	Type of Industry	Location	Direct or Indirect Discharger
Raintree Essix Inc.	Manufactures dental equipment and supplies	Metairie	Indirect ¹⁴
Sazerac Co. Inc./Monsieur Henri (PA)	Manufactures syrup flavors, wines, distilled spirits, and cordials	Jefferson	Indirect ¹⁵
Scott-Bishop Dental Ceramics	Dental crowns, bridges, partials, and appliances	Metairie	Indirect ¹⁵
Snee Chemical Co.	Manufacturing, packaging, and distribution of janitorial supplies	Harahan	Indirect ¹⁶
Southern Rings By W T Johnson	Manufactures custom designed decorative, precious gold rings, mountings, pendants, earrings, and bracelets	Metairie	Indirect ¹⁵
Sunshine Pages (HQ)	Telephone directory publishing	Metairie	Indirect ¹⁵
T & M Dental Lab Inc.	Dentures and partials	Metairie	Indirect ¹⁵
Thompson Equipment Co. Inc. (PA)	Manufactures magnetic flow meters and water flow instruments	Jefferson	Indirect ¹⁵

STANDARD LANGUAGE RECOMMENDATION AND JUSTIFICATION:

The East Bank Treatment Plant (LA0066630) is owned by the Jefferson Parish Department of Public Works. Jefferson Parish began implementing an approved pretreatment program on September 1, 1982 and this program is tracked under LA0066630. The program was modified on January 8, 1993 to incorporate new pretreatment regulations and Technically Based Local Limits (TBLLs) into the program. Additionally, in a letter dated June 20, 2005, LDEQ granted approval of a modification to the Jefferson Parish Pretreatment Program to incorporate modified TBLLs. This modification shall be incorporated in the reissued LPDES permit LA0066630. An industrial pretreatment audit of this program was conducted on March 30 – April 1, 2004 and it indicated that the program is being implemented in a manner sufficient to regulate the industries listed above.

Therefore, it is recommended that LDEQ Option 2A Pretreatment Language be included in LPDES Permit LA0066630. This language is established for municipalities with industrial users on their collection system and with an approved pretreatment program. This recommendation is in accordance with 40 CFR Part 403 Regulations and the Best Professional Judgement (BPJ) of the reviewer.

¹⁴ The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry.

¹⁵ The discharge is sanitary wastewater only.

¹⁶ The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry. The Control Authority (CA) has permitted this facility as a Significant Industrial User (SIU).

BIOMONITORING REQUIREMENTS

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0066630**
 Facility Name: **Jefferson Parish Department of Sewerage – East Bank WWTP**
 Previous Critical Dilution: **1.08%** Proposed Critical Dilution: **1.08% (10:1 ACR)**
 Date of Review: **06/10/05** Name of Reviewer: **Kim Gunderson**

Recommended Frequency by Species:

Pimephales promelas (Fathead minnow): **Once/Quarter¹**
Daphnia pulex (water flea): **Once/Quarter¹**

Recommended Dilution Series: **0.45%, 0.61%, 0.81%, 1.08%, and 1.4%**

Number of Tests Performed during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **5**
Daphnia pulex (water flea): **5**
Daphnia magna (water flea): **N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea): **N/A – Testing of species was not required**

Number of Failed Tests during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **No failures on file during the last 5 years**
Daphnia pulex (water flea): **No failures on file during the last 5 years**
Daphnia magna (water flea): **N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea): **N/A – Testing of species was not required**

Failed Test Dates during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **No failures on file during the last 5 years**
Daphnia pulex (water flea): **No failures on file during the last 5 years**
Daphnia magna (water flea): **N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea): **N/A – Testing of species was not required**

Previous TRE Activities: **N/A – No previous TRE Activities**

¹ If there are no lethal effects demonstrated after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the monitoring frequency for the test species may be reduced to not less than once per year for the less sensitive species (usually *Pimephales promelas*) and not less than twice per year for the more sensitive species (usually *Daphnia pulex*). Upon expiration of the permit, the monitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

Jefferson Parish Department of Sewerage – East Bank WWTP owns an existing publicly owned treatment works serving the Metairie, Jefferson, River Ridge, and other unincorporated areas, located in Harahan, Jefferson Parish, Louisiana. LPDES Permit LA0066630, effective September 1, 2000, contained freshwater acute biomonitoring as an effluent characteristic of Outfall 001 for *Daphnia pulex* and *Pimephales promelas*. The effluent series consisted of 0.45%, 0.61%, 0.81%, 1.08%, and 1.44% concentrations, with 1.08% being defined as the critical dilution. The testing was to be performed once per year for *Daphnia pulex* and *Pimephales promelas*. Data on file indicate that the permittee has complied with the biomonitoring requirements contained in LA0066630 with no failures from a toxicity test in the last five years.

To adequately assess the facility's effluent potential for receiving stream and/or aquatic species toxicity, it is recommended that freshwater acute biomonitoring continue to be an effluent characteristic of Outfall 001 (design flow of 33 MGD) in LA0066630. The effluent dilution series shall be 0.45%, 0.61%, 0.81%, 1.08%, and 1.4% concentrations, with 1.08% being defined as the critical dilution (the 10:1 Acute-to-Chronic ratio has been implemented because the critical dilution is less than 5%). In accordance with the Environmental Protection Agency (Region 6) WET testing frequency acceleration(s), the biomonitoring frequency shall be once per quarter for *Daphnia pulex* and *Pimephales promelas*. If there are no significant lethal effects demonstrated at or below the critical dilution during the first four quarters of testing, the permittee may certify fulfillment of the WET testing requirements to the permitting authority and WET testing may be reduced to not less than once per six months for the more sensitive species (usually *Daphnia pulex*) and not less than once per year for the less sensitive species (usually *Pimephales promelas*) for the remainder of the term of the permit. Upon expiration of the permit, the monitoring frequency for both test species shall revert to once per quarter until the permit is re-issued.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.